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EXAMINER	
DANIELS, MATTHEW J	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,554	HIGUCHI, FUMII	
	Examiner	Art Unit	
	Matthew J. Daniels	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2007 and 31 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 April 2007 has been entered. In this reply, Claims 1, 7, and 13 were amended.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. **Claims 1, 5-7, 11-13, 17, and 18** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 15-20 of U.S. Patent No. 5,686,219 (Higuchi) in view of Schippers (USPN 3360824). **As to Claims 1, 7, and 13**, Claim 15 of Higuchi provides the basic claims process of preparing a toner resin from base resin (10:58-59) comprising:

Providing a base resin and toner extruder (10:60-11:2), and conveying the base resin to an aperture in the housing of a toner extruder (10:60-61), the housing surrounding the conveyor (10:61);

Adding chemical initiator to the toner extruder (10:65);

Mixing the base resin and the chemical initiator within the extruder to form the mixed resin (10:66-67); and,

Conveying the mixed resin within the extruder to an extruding die (11:1-2);

Higuchi does not specifically teach providing a lead-in gap between a wall of the housing and conveyor at a feed port end of the conveyor such that the adhesion of melted resin to the walls of the aperture is inhibited and wherein the lead-in gap inhibits adhesion by smoothing and squeezing resin to the side of the conveyor.

However, lead-in gaps at a feed port end would have been obvious over Schippers, who teaches a lead-in gap, otherwise known as a "draw-in pocket", provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Schippers with Higuchi, it is submitted that the inhibiting of adhesion of melted resin to the walls of the aperture and smoothing and squeezing of resin to the side of the conveyor would have been obvious because the decrease in cross sectional area disclosed by Schippers would have pushed

resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schippers into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Schippers provides a variation in the shape or clearances (Fig. 1, item 15; Fig. 4, item 38; Fig. 8, item 15).

b) The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Schippers provides a device and process that was improved in the same manner, namely the use of a "draw-in pocket" which functions to facilitate and improve the feeding of raw material in a plastic or solid condition into the screw passage (1:50-60). Because the charging portion and method of Higuchi (Fig. 1) are similar in shape and function to the charging device and method of Schippers (Fig. 1, items 13, 26), one of ordinary skill could have applied the draw-in pocket of Schippers to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the filling and melting behavior would be improved (Schippers, 3:19-65).

As to Claims 5, 11, and 17, Higuchi teaches premixing the base resin with the chemical initiator (12:3-4). **As to Claims 6, 12, and 18**, Higuchi teaches cooling the base resin (12:5-6).

3. **Claims 1, 5-7, 11-13, 17, and 18** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 15-20 of U.S. Patent No. 5,686,219

(Higuchi) in view of Meinander (WO 99/43886). **As to Claims 1, 7, and 13**, Claim 15 of Higuchi provides the basic claims process of preparing a toner resin from base resin (10:58-59) comprising:

Providing a base resin and toner extruder (10:60-11:2), and conveying the base resin to an aperture in the housing of a toner extruder (10:60-61), the housing surrounding the conveyor (10:61);

Adding chemical initiator to the toner extruder (10:65);

Mixing the base resin and the chemical initiator within the extruder to form the mixed resin (10:66-67); and,

Conveying the mixed resin within the extruder to an extruding die (11:1-2);

Higuchi does not specifically teach providing a lead-in gap between a wall of the housing and conveyor at a feed port end of the conveyor such that the adhesion of melted resin to the walls of the aperture is inhibited and wherein the lead-in gap inhibits adhesion by smoothing and squeezing resin to the side of the conveyor.

However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap, otherwise known as a "wedge-like inlet" (Page 15, line 9), provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Meinander with Higuchi, it is submitted that inhibiting adhesion and the smoothing and squeezing of resin to the side of the conveyor would have been obvious because the shape of the housing and the direction of rotation of the conveyor of Meinander would have pushed resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Meinander teaches or suggests that a wedge-like inlet (a shape or clearance) is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14). The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Meinander provides a device and process that was improved in a similar manner, namely the use of a "wedge-like inlet" which functions to improve the efficiency of mass introduction and minimize trough volume (page 15, lines 11-13). Because the charging portion and mixer of Higuchi (Fig. 1) are similar in shape and function to the charging device and mixer of Meinander (Fig. 3, 4b), one of ordinary skill could have applied the wedge-like inlet of Meinander to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the efficiency of Higuchi's mass introduction process would have been improved and the volume of the trough minimized.

As to Claims 5, 11, and 17, Higuchi teaches premixing the base resin with the chemical initiator (12:3-4). **As to Claims 6, 12, and 18**, Higuchi teaches cooling the base resin (12:5-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Rejections over Higuchi in view of Schippers

4. **Claims 1-4, 6-10, 12-16, and 18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (USPN 5686219) in view of Schippers (USPN 3360824). **As to Claim 1**, Higuchi teaches a method for preparing a toner resin from a base resin, comprising:

conveying a base resin to an aperture in a housing of a toner extruder, the housing surrounding a conveyor (Figs. 1-5);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to a toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form the mixed resin (3:57-4:5); and

conveying the mixed resin within the extruder to an extruding die (Fig. 3, 120).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor and to the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Schippers, who teaches a lead-in gap, otherwise known as a "draw-in pocket", provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Schippers with Higuchi, it is

submitted that the smoothing and squeezing of resin to the side of the conveyor would have been obvious because the decrease in cross sectional area disclosed by Schippers would have pushed resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schippers into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Schippers provides a variation in the shape or clearances (Fig. 1, item 15; Fig. 4, item 38; Fig. 8, item 15).

b) The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Schippers provides a device and process that was improved in the same manner, namely the use of a "draw-in pocket" which functions to facilitate and improve the feeding of raw material in a plastic or solid condition into the screw passage (1:50-60). Because the charging portion and method of Higuchi (Fig. 1) are similar in shape and function to the charging device and method of Schippers (Fig. 1, items 13, 26), one of ordinary skill could have applied the draw-in pocket of Schippers to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the filling and melting behavior would be improved (Schippers, 3:19-65).

As to Claims 2 and 3, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Schippers. **As to Claim 4**, Higuchi teaches a spacing

between the housing and the conveyor (8:50-67). **As to Claim 6,** Higuchi cools the base resin (4:27 and elsewhere).

As to Claim 7, Higuchi teaches a toner resin preparation method comprising:

providing a base resin (3:59-60);

providing a toner extruder comprising a housing and a conveyor in the housing (Figs. 1-5);

placing base resin in the toner extruder (Fig. 2, item 26);

conveying base resin to an aperture in the toner extruder housing (Fig. 1);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to the base resin in the toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form a mixed resin (columns 3-7);

conveying the mixed resin within the extruder to an extruding die (Fig. 2, item 120); and

extruding the mixed resin through the extruding die to form toner resin (Fig. 2, item 120, 4:66-5:10).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor and to the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Schippers, who teaches a lead-in gap, otherwise known as a "draw-in pocket", provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Schippers with Higuchi, it is submitted that the smoothing and squeezing of resin to the side of the conveyor would have been

obvious because the decrease in cross sectional area disclosed by Schippers would have pushed resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schippers into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Schippers provides a variation in the shape or clearances (Fig. 1, item 15; Fig. 4, item 38; Fig. 8, item 15).

b) The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Schippers provides a device and process that was improved in the same manner, namely the use of a "draw-in pocket" which functions to facilitate and improve the feeding of raw material in a plastic or solid condition into the screw passage (1:50-60). Because the charging portion and method of Higuchi (Fig. 1) are similar in shape and function to the charging device and method of Schippers (Fig. 1, items 13, 26), one of ordinary skill could have applied the draw-in pocket of Schippers to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the filling and melting behavior would be improved (Schippers, 3:19-65).

As to Claims 8 and 9, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Schippers. **As to Claim 10**, Higuchi teaches a

spacing between the housing and the conveyor (8:50-67). **As to Claim 12**, Higuchi cools the base resin (4:27 and elsewhere).

As to Claim 13, Higuchi teaches a toner resin preparation method in an apparatus that has an aperture (Fig. 1, items 210 and 214) comprising:

providing a base resin (3:59-60);

placing base resin in the toner extruder (Fig. 2, item 26);

conveying base resin to an aperture in the toner extruder housing (Fig. 1);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to the base resin in the toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form a mixed resin (columns 3-7);

conveying the mixed resin within the extruder to an extruding die (Fig. 2, item 120); and

extruding the mixed resin through the extruding die to form toner resin (Fig. 2, item 120, 4:66-5:10).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor and to the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Schippers, who teaches a lead-in gap, otherwise known as a "draw-in pocket", provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Schippers with Higuchi, it is submitted that the smoothing and squeezing of resin to the side of the conveyor would have been obvious because the decrease in cross sectional area disclosed by Schippers would have pushed

resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schippers into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Schippers provides a variation in the shape or clearances (Fig. 1, item 15; Fig. 4, item 38; Fig. 8, item 15).

b) The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Schippers provides a device and process that was improved in the same manner, namely the use of a "draw-in pocket" which functions to facilitate and improve the feeding of raw material in a plastic or solid condition into the screw passage (1:50-60). Because the charging portion and method of Higuchi (Fig. 1) are similar in shape and function to the charging device and method of Schippers (Fig. 1, items 13, 26), one of ordinary skill could have applied the draw-in pocket of Schippers to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the filling and melting behavior would be improved (Schippers, 3:19-65).

As to Claims 14 and 15, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Schippers. **As to Claim 16**, Higuchi teaches a spacing between the housing and the conveyor (8:50-67). **As to Claim 18**, Higuchi cools the base resin (4:27 and elsewhere).

As to Claims 19, 21, and 23, these claim limitations are interpreted to refer to instant Figs. 8 and 9 where the arrow on item 220 is directed to the side of the extruder to which resin flow is directed toward the lead-in gap. However, Schippers has gaps on both sides (Fig. 8), therefore there would always be a gap would always be on the side to which the resin flow is directed.

As to Claims 20, 22, and 24, these claim limitations are drawn to a capability, namely that of having "movable aspects" (See Claims 20, 22, 24, "has movable aspects"), which is an apparatus limitation and not a process step. Because the capability is not utilized by the process (there is no claim or step to moving these movable aspects), these limitations should be given little patentable weight as being drawn to apparatus limitations which do not materially affect the process. However, note that Schippers teaches a movable aspects (Fig. 4, items 40, 42, 39) which would provide the ability to vary at least size and shape of the draw-in pocket. Additionally, where separability and adjustability are desirable, it is generally obvious to make portions of a device separable or adjustable. *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954); *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961). Adding adjustability or separability would lead to the Schippers method would lead to the claimed process.

5. **Claims 5, 11, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (USPN 5686219) in view of Schippers (USPN 3360824), and further in view of Bayley (USPN 5397671). Higuchi and Schippers teach the subject matter of Claims 1, 7, and 13 above under 35 USC 103(a). **As to Claim 5**, Higuchi appears to be silent to the premixing of the base

resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus. **As to Claim 11**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus. **As to Claim 17**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus.

Rejections over Higuchi and Meinander

6. **Claims 1-4, 6-10, 12-16, and 18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (USPN 5686219) in view of Meinander (WO 99/43886). **As to Claim 1**, Higuchi teaches a method for preparing a toner resin from a base resin, comprising:

conveying a base resin to an aperture in a housing of a toner extruder, the housing surrounding a conveyor (Figs. 1-5);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to a toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form the mixed resin (3:57-4:5); and

conveying the mixed resin within the extruder to an extruding die (Fig. 3, 120).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor and to the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap, otherwise known as a "wedge-like inlet" (Page 15, line 9), provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Meinander with Higuchi, it is submitted that the smoothing and squeezing of resin to the side of the conveyor would have been obvious because the shape of the housing and the direction of rotation of the conveyor would have pushed resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Meinander teaches or suggests that a wedge-like inlet (a shape or clearance) is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14). The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in

gap". However, Meinander provides a device and process that was improved in a similar manner, namely the use of a "wedge-like inlet" which functions to improve the efficiency of mass introduction and minimize trough volume (page 15, lines 11-13). Because the charging portion and mixer of Higuchi (Fig. 1) are similar in shape and function to the charging device and mixer of Meinander (Fig. 3, 4b), one of ordinary skill could have applied the wedge-like inlet of Meinander to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the efficiency of Higuchi's mass introduction process would have been improved and the volume of the trough minimized.

As to Claims 2 and 3, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Meinander. **As to Claim 4**, Higuchi teaches a spacing between the housing and the conveyor (8:50-67). **As to Claim 6**, Higuchi cools the base resin (4:27 and elsewhere).

As to Claim 7, Higuchi teaches a toner resin preparation method comprising:

providing a base resin (3:59-60);

providing a toner extruder comprising a housing and a conveyor in the housing (Figs. 1-5);

placing base resin in the toner extruder (Fig. 2, item 26);

conveying base resin to an aperture in the toner extruder housing (Fig. 1);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to the base resin in the toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form a mixed resin (columns 3-7);

conveying the mixed resin within the extruder to an extruding die (Fig. 2, item 120); and

extruding the mixed resin through the extruding die to form toner resin (Fig. 2, item 120, 4:66-5:10).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor and to the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap, otherwise known as a "wedge-like inlet" (Page 15, line 9), provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Meinander with Higuchi, it is submitted that the smoothing and squeezing of resin to the side of the conveyor would have been obvious because the shape of the housing and the direction of rotation of the conveyor would have pushed resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Meinander teaches or suggests that a wedge-like inlet (a shape or clearance) is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14). The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Meinander provides a device and process that was improved in a similar

manner, namely the use of a "wedge-like inlet" which functions to improve the efficiency of mass introduction and minimize trough volume (page 15, lines 11-13). Because the charging portion and mixer of Higuchi (Fig. 1) are similar in shape and function to the charging device and mixer of Meinander (Fig. 3, 4b), one of ordinary skill could have applied the wedge-like inlet of Meinander to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the efficiency of Higuchi's mass introduction process would have been improved and the volume of the trough minimized.

As to Claims 8 and 9, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Meinander. **As to Claim 10**, Higuchi teaches a spacing between the housing and the conveyor (8:50-67). **As to Claim 12**, Higuchi cools the base resin (4:27 and elsewhere).

As to Claim 13, Higuchi teaches a toner resin preparation method in an apparatus that has an aperture (Fig. 1, items 210 and 214) comprising:

providing a base resin (3:59-60);

placing base resin in the toner extruder (Fig. 2, item 26);

conveying base resin to an aperture in the toner extruder housing (Fig. 1);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to the base resin in the toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form a mixed resin (columns 3-7);

conveying the mixed resin within the extruder to an extruding die (Fig. 2, item 120); and

extruding the mixed resin through the extruding die to form toner resin (Fig. 2, item 120, 4:66-5:10).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor and to the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap, otherwise known as a "wedge-like inlet" (Page 15, line 9), provided between a wall of the housing and the conveyor at a feed port end of the conveyor. In the combination of Meinander with Higuchi, it is submitted that the smoothing and squeezing of resin to the side of the conveyor would have been obvious because the shape of the housing and the direction of rotation of the conveyor would have pushed resin to the side of the conveyor, providing the claimed inhibition of adhesion by smoothing and squeezing resin to the side of the conveyor.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi for the following reasons:

a) Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Meinander teaches or suggests that a wedge-like inlet (a shape or clearance) is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14). The claimed method purports to be an improvement upon the method of Higuchi by the use of a "lead-in gap". However, Meinander provides a device and process that was improved in a similar manner, namely the use of a "wedge-like inlet" which functions to improve the efficiency of mass introduction and minimize trough volume (page 15, lines 11-13). Because the charging

portion and mixer of Higuchi (Fig. 1) are similar in shape and function to the charging device and mixer of Meinander (Fig. 3, 4b), one of ordinary skill could have applied the wedge-like inlet of Meinander to the process of Higuchi by adjusting only the shape of the housing wall to achieve the predictable result that the efficiency of Higuchi's mass introduction process would have been improved and the volume of the trough minimized.

As to Claims 14 and 15, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Meinander. **As to Claim 16**, Higuchi teaches a spacing between the housing and the conveyor (8:50-67). **As to Claim 18**, Higuchi cools the base resin (4:27 and elsewhere).

As to Claims 19, 21, and 23, these claim limitations are interpreted to refer to instant Figs. 8 and 9 where the arrow on item 220 is directed to the side of the extruder to which resin flow is directed toward the lead-in gap. Meinander provides arrows items 20' and 22' in Figs. 3 and 4b, respectively, which show that the wedge that is interpreted to be the lead-in gap is on a side of the mixer to which the flow of material is directed.

As to Claims 20, 22, and 24, these claim limitations are drawn to a capability, namely that of having "movable aspects" (See Claims 20, 22, 24, "has movable aspects"), which is an apparatus limitation and not a process step. Because the capability is not utilized by the process (there is no claim or step to moving these movable aspects), these limitations are given little patentable weight as being drawn to apparatus limitations which do not materially affect the process. In a first alternative interpretation, Meinander teaches that the transition or wedge should be designed in one of several configurations (Figs. 3 and 4b), and it would have been

obvious to provide separable and movable elements to provide the ability to adjust the design to determine the maximally efficient mass introduction design suggested on page 15 of the reference. Adjustability, where it is needed, is not a patentable advance. *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954). In this case, there is an art-recognized need for multiple possible shapes, which would suggest the need or desirability of adjustability for those components. In a second alternative interpretation, it would have been obvious to make the wedge portions of Meinander (item 14 in Figs. 3-4b) separable in order to clean the interior and the mixing elements. Where it would be considered desirable to obtain access to a device, it would be obvious to make a portion of the device removable for that purpose. *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961).

7. **Claims 5, 11, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (USPN 5686219) in view of Meinander (WO 99/43886), and further in view of Bayley (USPN 5397671). Higuchi and Meinander teach the subject matter of Claims 1, 7, and 13 above under 35 USC 103(a). **As to Claim 5**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus. **As to Claim 11**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary

skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus. **As to Claim 17**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus.

Response to Arguments

8. Applicant's arguments filed 12 April 2007 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

a) It is unreasonable to assert that Higuchi and Meinander, individually or in combination, teach or suggest a lead-in gap between a wall of the housing and the conveyor at a feed port end that inhibits adhesion by smoothing and squeezing resin to the side of the conveyor.

b) The Meinander and Higuchi references are not combinable because they are directed at different problems and are non-analogous.

c) Meinander does not contemplate adjustable clearances.

d) Higuchi teaches away form the feature recited in Claims 1, 7, and 13.

9. These arguments are not persuasive for the following reasons:

a) Meinander provides teaching to vary the lead-in gap, and disclosure that this lead-in gap achieves better ("maximally efficient mass introduction") mass introduction. Although

Meinander does not specifically teach inhibiting adhesion by squeezing resin to the side of the conveyor, it is noted that the mixing element of Meinander (Fig. 4b, item 22') is rotated to the outside and the lead-in gap is shaped similarly to the disclosed invention in this case, and therefore in the combination the apparatus of Meinander would provide the claimed smoothing, squeezing, and other claimed effects.

b) It was argued previously and is reasserted that both references are at least within the same field of endeavor of mixing processes. A difference in the material mixed is not interpreted as separating these references into different fields of endeavor. Additionally note the new reference to Schippers, which is within the same field of endeavor and pertinent to the particular problem.

c) The claims require only that the lead-in gap has the *capability* of being adjusted, but there is no step of adjusting recited in this process claim. As such, it is an apparatus limitation which does not materially affect the process, and is given little patentable weight. Moreover, it was asserted (Final Rejection, 7 March 2007, page 7) that Meinander teaches that the transition or wedge should be designed in one of several configurations, and it would have been obvious to provide movable elements to provide the ability to adjust the design to determine the maximally efficient mass introduction design suggested on page 15 of the Meinander reference. Adjustability, where needed, is generally not a patentable advance. *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954).

d) To the extent that Applicants' remarks indicate that Higuchi teaches away from the subject matter of Claims 1, 7, and 13 at col. 8, lines 54-60, it should be noted that the instant specification repeats exactly the same or substantially the same paragraph (that cited in the Higuchi Patent at 8:54-60) on page 16 (Par. [0061]). Thus, it is submitted that there can be no

teaching away from the claimed invention in the Higuchi reference by the incorporation of the same teaching in the instant specification.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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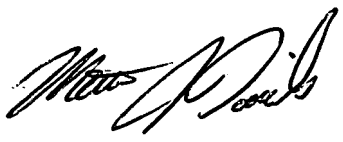

Matthew J. Daniels

A.U. 1732
20 August 2007